

ART 2:1 ADADT

Claims

1. A polymer composition comprising
 - (A) optionally a matrix polymer,
 - (B) a nanofiller ~~and~~ *which is a clay-based layered material*
 - (C) a polyolefin with functional groups which has been prepared directly by polymerising olefin monomers with comonomers comprising functional groups using a single site catalyst.
2. A polymer composition according to claim 1, wherein the fraction of the comonomers with functional groups in polyolefin (C) is from 0.05 to 10 mol%, preferably from 0.1 to 5 mol% and still more preferred from 0.1 to 2 mol%.
3. A polymer composition according claims 1 or 2, wherein polyolefin (C) is a polyolefin with polar groups.
4. A polymer composition according to claim 3, wherein the polar comonomers used in the preparation of polyolefin (C) are monomers comprising a carbon-carbon double bond and an organic alcohol or acid group.
5. A polymer composition according to claim 4, wherein said comonomers comprise from 6 to 18 carbon atoms, and more preferably from 8 to 16 carbon atoms.
6. A polymer composition according to any of the preceding claims, wherein polyolefin (C) is a copolymer comprising ethylene and/or propylene monomers and comonomers with functional groups.

ART 31 AMDT

~~7. A polymer composition according to any of the preceding claims, wherein nanofiller (B) is a clay-based layered material.~~

7. ~~8.~~ A polymer composition according to claim ¹ wherein nanofiller (B) has been intercalated with a quaternary ammonium compound containing intercalating agent.

8. ~~9.~~ A polymer composition according to any of the preceding claims, wherein matrix polymer (A) is a polyolefin.

9. ~~10.~~ A polymer composition according to claim ⁸ ~~9~~, wherein matrix polymer (A) is an ethylene or propylene homo- or copolymer.

10. ~~11.~~ A polymer composition according to any of the preceding claims, wherein polyolefin (C) is present in an amount of 1 to 100, preferably of 5 to 50 and still more preferred of 4 to 10 parts by weight per 100 parts by weight of the total composition.

11. ~~12.~~ A polymer composition according to any of the preceding claims, wherein nanofiller (B) is present in an amount of 1 to 15, preferably of 2 to 10 and still more preferred of 4 to 10 parts by weight per 100 parts by weight of the total composition.

12. ~~13.~~ A polymer composition according to any of the preceding claims, wherein the matrix polymer (A) is present in amount of from 0 to 98, preferably from 40 to 93 and still more preferred from 45 to 91 parts by weight per 100 parts by weight of the total composition.

13. ~~14.~~ Use of a polyolefin with functional groups which has been prepared by polymerising olefin monomers with comonomers comprising functional groups using a single site catalyst as a compatibiliser in a polymer composition comprising a matrix polymer and a nanofiller ~~x~~ which is a clay-based layered material.